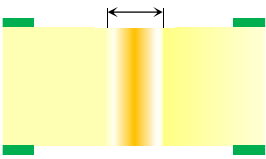


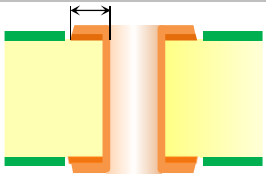
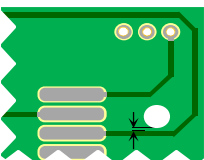
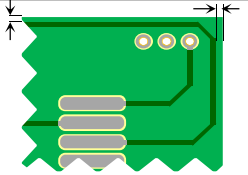
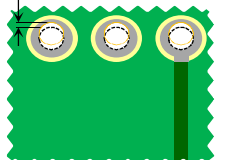
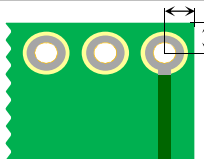
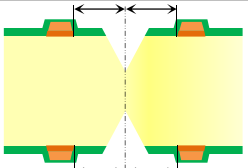


## Technical Capabilities for Double Sided PCB's

Item	Minimum Capability	Maximum Capability	Tolerance	Remarks
<b>Metal Finishing:</b> Hal Lead Free (SnCuNi) Chemical Tin (Inm.Sn) (*) Chemical Silver (Inm.Ag) Electroless Ni Immersion Gold (ENIG)	Ni: 3 µm Au: 0,04 µm	Ni: 7 µm Au: 0,07 µm	-	Sn100C Alloyage (*) Subcontracted
<b>Final Finishing:</b> Liquid PhotoImageable Solder Mask Ink Legend Conductive Carbon Ink Peelable Mask	-	-	-	A wide range of colours A wide range of colours
<b>Raw Material:</b> FR-4 Tg Standard FR-4 High Tg	130 °C 150 °C	140°C 180 °C	-	Depending on the manufacturer
<b>Base Copper</b>	17 µm	70 µm	-	Under request (consult delivery time): 105 µm
<b>Plated Through Hole (PTH)</b> 	200 µm	-	+ 0,10 / - 0,05 mm	Or equivalent tolerance
<b>Non Plated Through Hole (NPTH)</b> 	300 µm	-	+ 0,10 / - 0 mm	Or equivalent tolerance
<b>Width and isolation of copper conductors (Base Copper)</b> 	100 µm (17 µm) 125 µm (35 µm) 200 µm (70 µm)	-	± 25% ± 30% ± 30%	-



## Technical Capabilities for Double Sided PCB's

Item		Minimum Capability	Maximum Capability	Tolerance	Remarks
Copper annular ring (Base Copper)		100 $\mu\text{m}$ (17 $\mu\text{m}$ ) 125 $\mu\text{m}$ (35 $\mu\text{m}$ ) 250 $\mu\text{m}$ (70 $\mu\text{m}$ )	-	-	Recommendation: for a good soldering surface, for component holes $\geq 200 \mu\text{m}$
Distance between NPTH and copper conductor		200 $\mu\text{m}$	-	-	-
Distance between copper conductor and board edge (routed)		150 $\mu\text{m}$	-	-	-
Misalignment between copper and PTH		-	-	$\pm 100 \mu\text{m}$	-
Misalignment between outline and PTH		-	-	$\pm 150 \mu\text{m}$	-
Distance between a copper conductor and theoretical scoring axis		500 $\mu\text{m}$	-	-	-



## Technical Capabilities for Double Sided PCB's

Item	Minimum Capability	Maximum Capability	Tolerance	Remarks
Maximum hole to be plugged with peelable mask	0,30 mm	1,80 mm	-	-
Distance between peelable mask and copper pad	0,80 mm	-	-	-
Solder Mask annular ring	50 $\mu$ m	-	-	-
Solder Mask bridge	100 $\mu$ m	-	-	-
Distance between solder mask clearance and copper conductor	50 $\mu$ m	-	-	-
Misalignement between solder mask and copper	-	-	$\pm$ 150 $\mu$ m	-

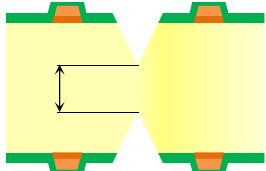
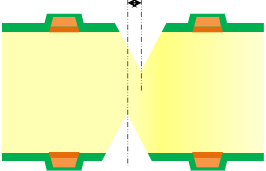
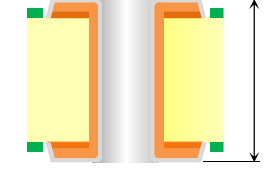
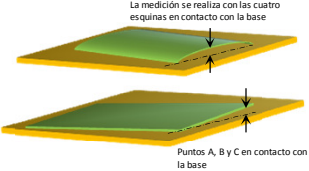
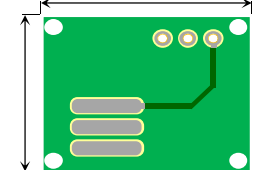


## Technical Capabilities for Double Sided PCB's

Item	Minimum Capability	Maximum Capability	Tolerance	Remarks
Ink Legend width	100 $\mu\text{m}$	-	-	-
Misalignement between ink legend and copper	-	-	$\pm 200 \mu\text{m}$	-
Carbon ink width	600 $\mu\text{m}$	-	-	-
Separation between carbon conductors	400 $\mu\text{m}$	-	-	-
Platted Wall thickness	20 $\mu\text{m}$	60 $\mu\text{m}$	-	Average: 25 $\mu\text{m}$
Scoring positioning (taken on axis)	-	-	$\pm 150 \mu\text{m}$	-



## Technical Capabilities for Double Sided PCB's

Item	Minimum Capability	Maximum Capability	Tolerance	Remarks
<b>Core thickness after scoring process</b> 	200 µm	-	± 150 µm	Standard: 300 µm
<b>Misalignment between top-bottom scoring blades</b> 	-	-	± 150 µm	-
<b>Final Thickness</b> 	0,50 mm	3,2 mm	± 10 % (e > 1,0 mm) ± 100 µm (e ≤ 1,0 mm)	-
<b>Bow &amp; Twist</b> 	-	0,75% of diagonal	-	-
<b>Final pcb dimensions (routing)</b> 	15 x 15 mm	600 x 500 mm	< 30 mm: ± 0.10 mm < 120 mm: ± 0.15 mm >120 mm: ± 0.20 mm	-
<b>Other</b>	-	-	-	According to IPC-A-600 revision G Standard

### REMARKS

1.- The extra Cu deposition is performed by an electrolytic process; therefore It is extremely convenient that the density of Cu on both sides is similar. This reduces the irregularities in total Cu thickness, warping and bending, reduction in PTH diameters and the excess of Cu on conductors.